varied from attacks of headaches, convulsive fits to repeated episodes of amaurosis.

To discuss the nature, especially the etiology of this peculiar cerebral vascular disease, the author has the opinion that this peculiar vascularity in the deep structure of the brain controls the function of blood supply for brain metabolism to compensate for poor circulation due to stenosis or obstruction of bilateral internal carotid arteries or their major branches. This seems collateral in nature from the angiographical and clinical standpoints.

We have had no cases of death and thus no histological examination have been made. The histological study on those abnormal vessels and the stenotic carotid wall should give some clue to determine the etiology of this disorder.

D-10. Cerebral Basal Rete Mirabile

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The authors presented statistics of total 96 cases of this disease including the authors’ own cases at the 24th Annual Meeting of Japan Neurosurgical Society, which were collected from literature and by letter inquiry into neurosurgical clinics in Japan 1965, and suggested that there is a marked difference in its clinical symptoms between children and adults. Moreover, the authors emphasized that serial bilateral carotid and vertebral angiography should be done to distinguish those cases from other occlusive diseases of internal cortid artery. Up to the present, 9 cases of this disease have been experienced in the authors’ clinic.

This time, the authors present our own opinion about the cause of this disease, which is thought to be congenital malformation. The reasons of congenital malformation theory are; 1) Typical angiographic findings are usually seen bilaterally as well as symmetrically. 2) Stenosis or occlusion and abnormal vascular network are seen only in the area of the internal carotid artery, while external carotid artery and vertebro-basilar arteries are quite normal. Therefore, the authors used the term “Hemangiomatous Malformation of Bilateral Internal Carotid Artery at the Base of Brain”. 3) Internal carotid artery is usually thin and narrow bilaterally in its total course from the bifurcation to the site of occlusion. Anterior and middle cerebral arteries, even if visualized, are usually of poor and irregular filling, and they do not originate directly from internal carotid, but from the vascular network. Thus, the internal carotid artery demonstrates an appearance of congenital malformation from the bifurcation to the peripheral area. 4) If an acute stenosis or occlusion occur at the site of carotid siphon, it must cause severe neurological symptoms even by unilateral one. In this cerebral basal rete mirabile disease, how-
ever, its clinical symptoms are mostly not severe in spite of bilateral stenosis. 5) Eight sibling cases (4 couples) are seen in the total 96 cases. 6) The abnormal blood circulation demonstrated in angiogram is somewhat similar to the state of cerebral blood vessels of human embryo of 11–14 mm in size. 7) Such clinical symptoms as convulsive seizure or subarachnoid hemorrhage which are most common in this disease are much similar to the symptoms of arteriovenous malformation.

The authors experimentally made complete or incomplete occlusion bilaterally at the site of carotid siphon (C1) immediately distal to the origin of the posterior communicating artery in 8 dogs, and angiographic investigation was made with intervals (from 3 months to 8 months), but abnormal vascular network was not seen.

This disease was reported by many authors under various diagnoses in Japan, but there is no definite name of this disease. The authors suggest to call the vascular network the “Cerebral basal rete mirabile”, as the cerebral angiogram of those Japanese cases are very unique and peculiar.

D-11. Clinical Cases with Abnormal Vascular Network

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In 2 cases of the author’s series, appearance of the cerebral vessels and abnormal vascular network was followed-up by repeated carotid arteriography. Both the case were children and their clinical course and angiographic findings were fairly similar.

Hemiplegic attacks, transient ischemic attacks in one case, followed by more persistent palsy was observed before their hospitalization. The first carotid arteriography showed bilateral occlusion of the carotid syphon and cerebral arteries peripheral to the syphon could be hardly visible. The development of the abnormal network was very poor at that time.

Vasodilator and periarterial sympathectomy was applied in both the cases and steroid hormone was markedly effective in one case. In conjunction with the clinical improvement, angiographic findings changed gradually. Namely, the abnormal vascular network around the occlusion became more extensive and at the same time the anterior and middle cerebral arteries were more clearly seen. Collateral circulation via the vertebro-basilar artery was proved to be extensive. However, in one case aphasia and character change were remained and in the